RELIANCE
OILFIELD SERVICES

Radial Cement Bond
Gamma Ray
Casing Collar Log

Company	TEP Rocky Mountain LLC
Well	Federa PA 432-26
Field	Parachute
County	Garfield
State	Colorado

Company TEP Rocky Mountain LLC
Well Federa PA 432-26
Field Parachute
County Garfield State Colorado
Location: API # : 05-045-23710
SEC 26 TWP 6S RGE 95W
Other Services
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			Elevation
Permanent Datum	Ground Level	Elevation 5637'	K.B. 5661' D.F. 5660' G.L. 5637'
Log Measured From	Kelly Bushing	24 FT	
Drilling Measured From	Kelly Bushing		

Date	04-JUN-2018
Run Number	One
Depth Driller	8660 FT
Depth Logger	8592 FT
Bottom Logged Interval	8578 FT
Top Log Interval	Surface
Open Hole Size	8.750"
Type Fluid	Water
Density / Viscosity	8.34 lb/gal
Max. Recorded Temp.	234°F
Estimated Cement Top	See Log
Time Well Ready	ROA
Time Logger on Bottom	15:45
Equipment Number	HD-0359
Location	Grand Junction, CO
Recorded By	Z. Fisher
Witnessed By	Dustin Welsh

Borehole Record			Tubing Record			
Run Number	Bit	From	To	Size	Weight	From	To

Casing Record	Size (in)	Wgt (lbs/Ft)	Grade	Top	Bottom
Surface Casing	9 5/8	32.3	H-40	Surface	1125 FT
Intermediate #1	4 1/2	11.6	P-110	Surface	8618 FT
Intermediate #2					
Liner					

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All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.

Comments

Log ran as per customer request
Depth referenced to Kelly Bushing at 24 FT
Marker Joint logged from 4463 - 4485 FT
Log ran from 8592 FT to Surface
Recorded with 0 PSI Surface Induced Pressure

Thank you for choosing Reliance Oilfield Services, LLC!

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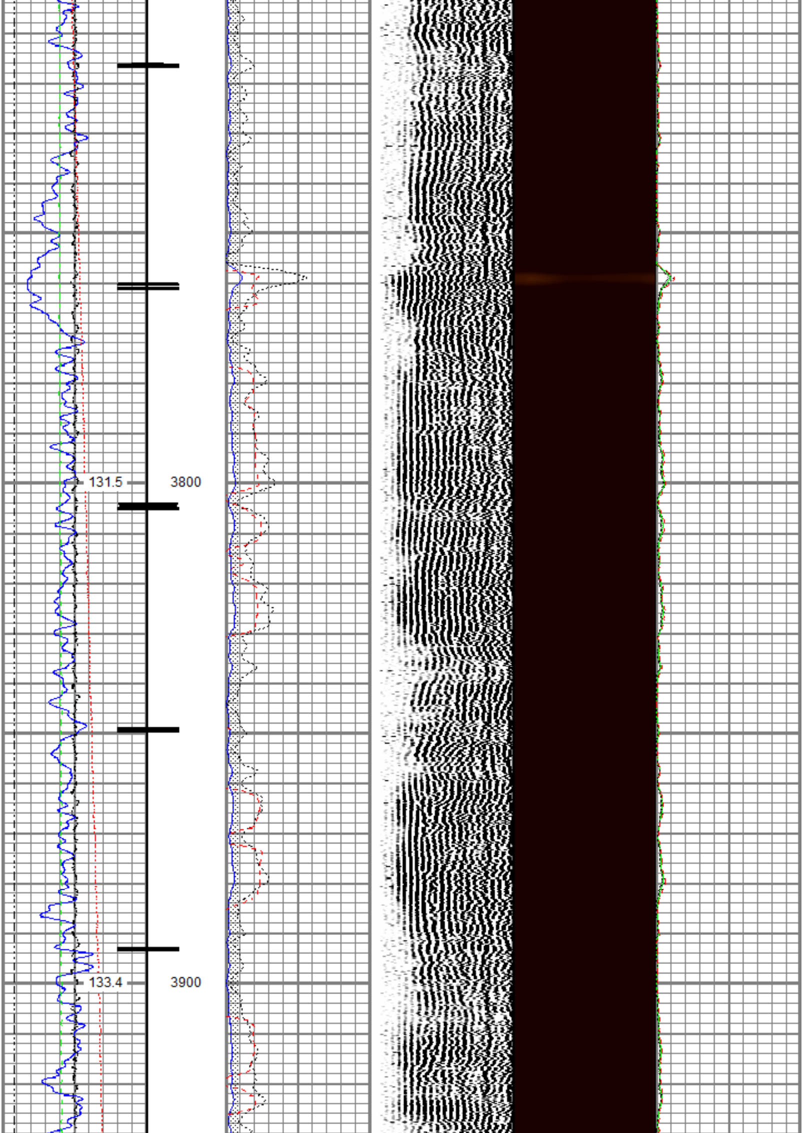
Main Pass

Recorded with 0 PSI Surface Induced Pressure

Database File	tep_federal pa 432-26_rbl_06-04-18\processed_tep_federal pa 432-26_rbl_06-04-18.db
Dataset Pathname	main
Presentation Format	ros_rbt004_tep
Dataset Creation	Mon Jun 04 16:52:51 2018
Charted by	Depth in Feet scaled 1:240

Track	Left	Unit	Right
Gamma Ray	0	(GAPI)	200
Line Speed	-150	(ft/min)	150
Line Tension	0	(lb)	2000
Differential Temperature	-2	(degF)	2
Temperature	0	(degF)	20
CCL	10		0
3' Amplitude	0	(mV)	100
3' Amplitude x 5	0	(mV)	20
3' Travel Time	300	(usec)	200
5' Variable Density Log	200	(usec)	1200
Sector Map			
Average Amplitude	0		150
Mimimum Amplitude	0		150
Maximum Amplitude	0		150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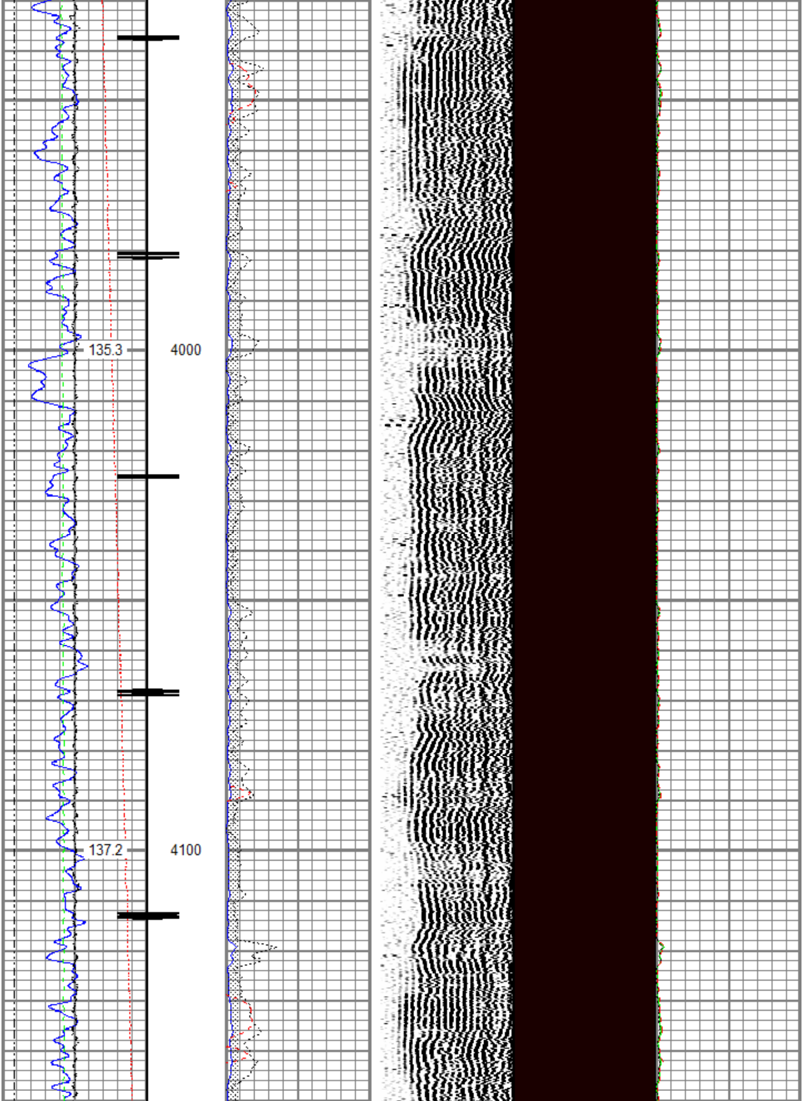
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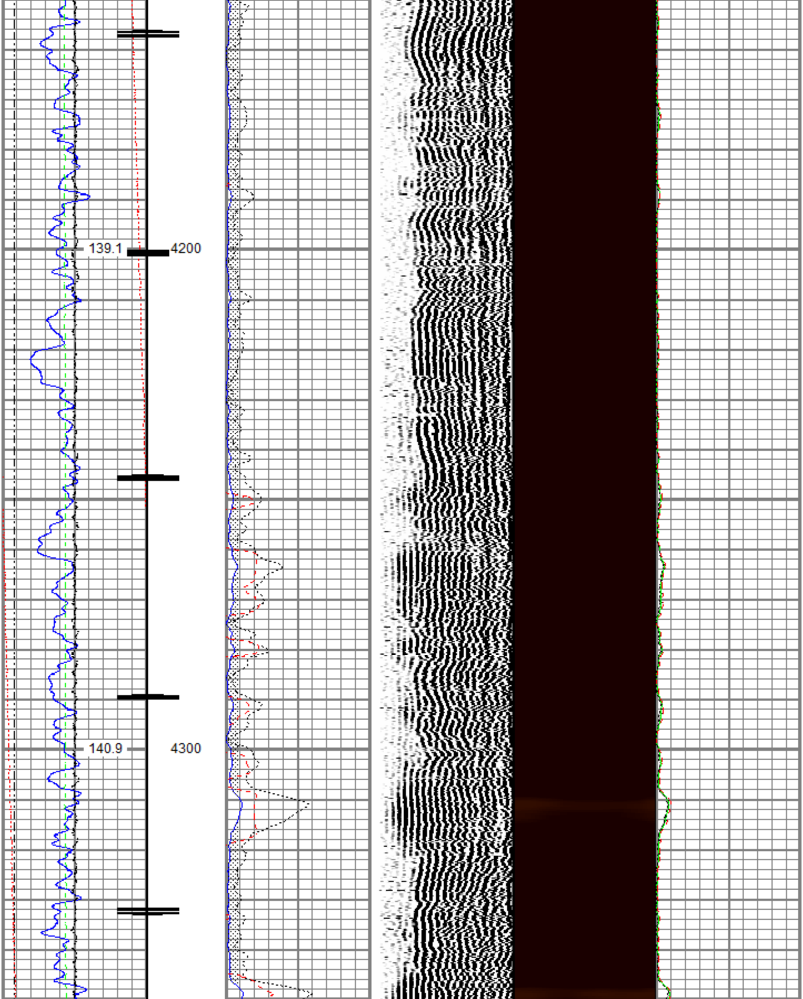
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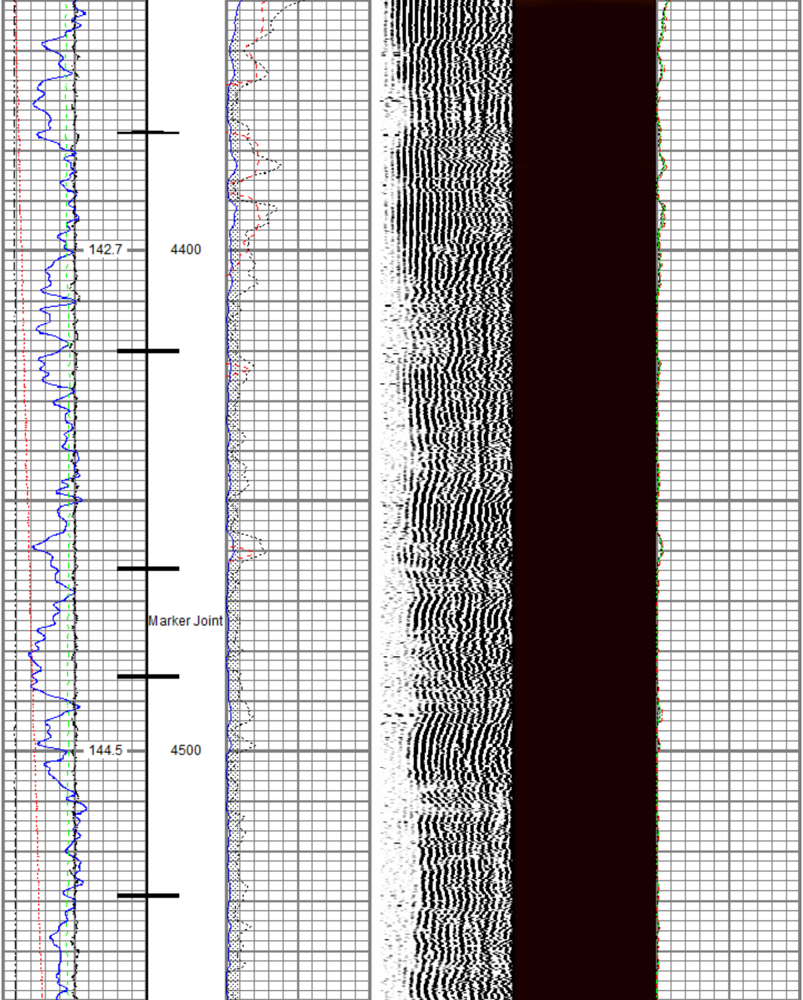
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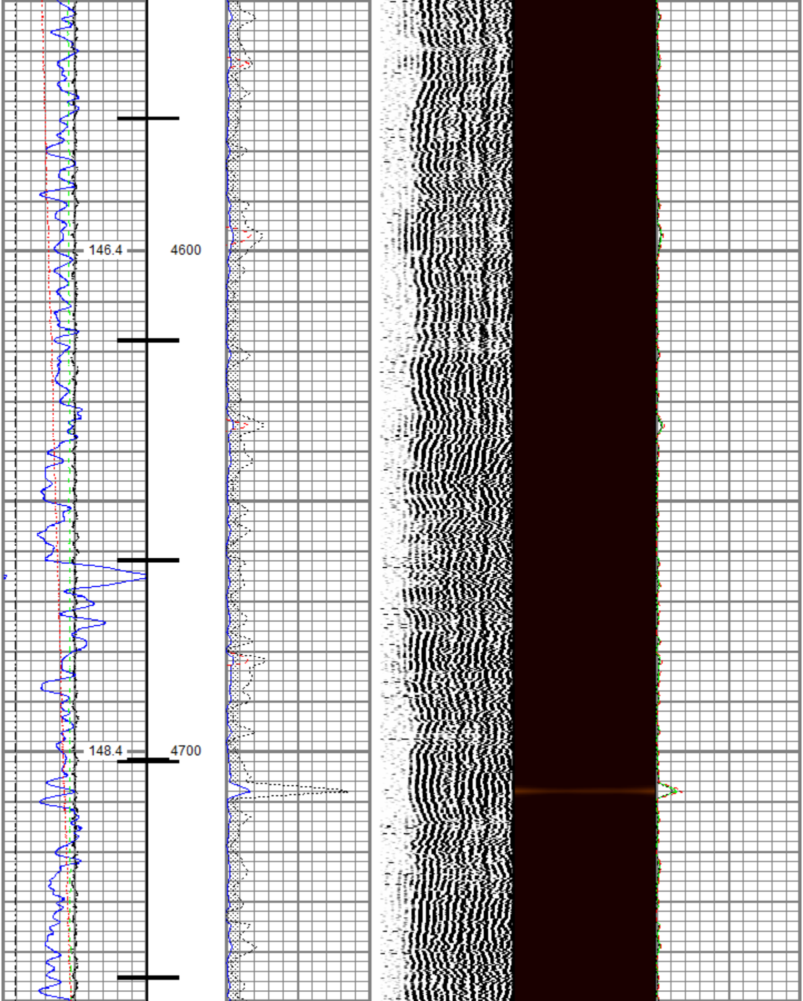
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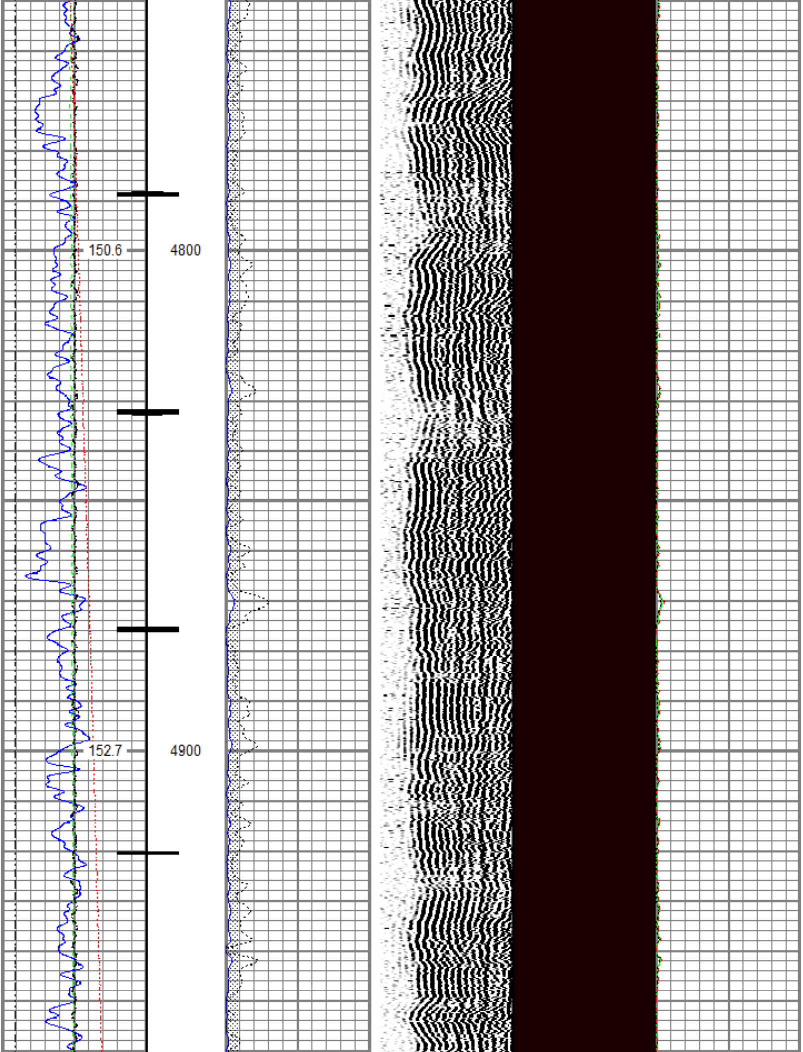
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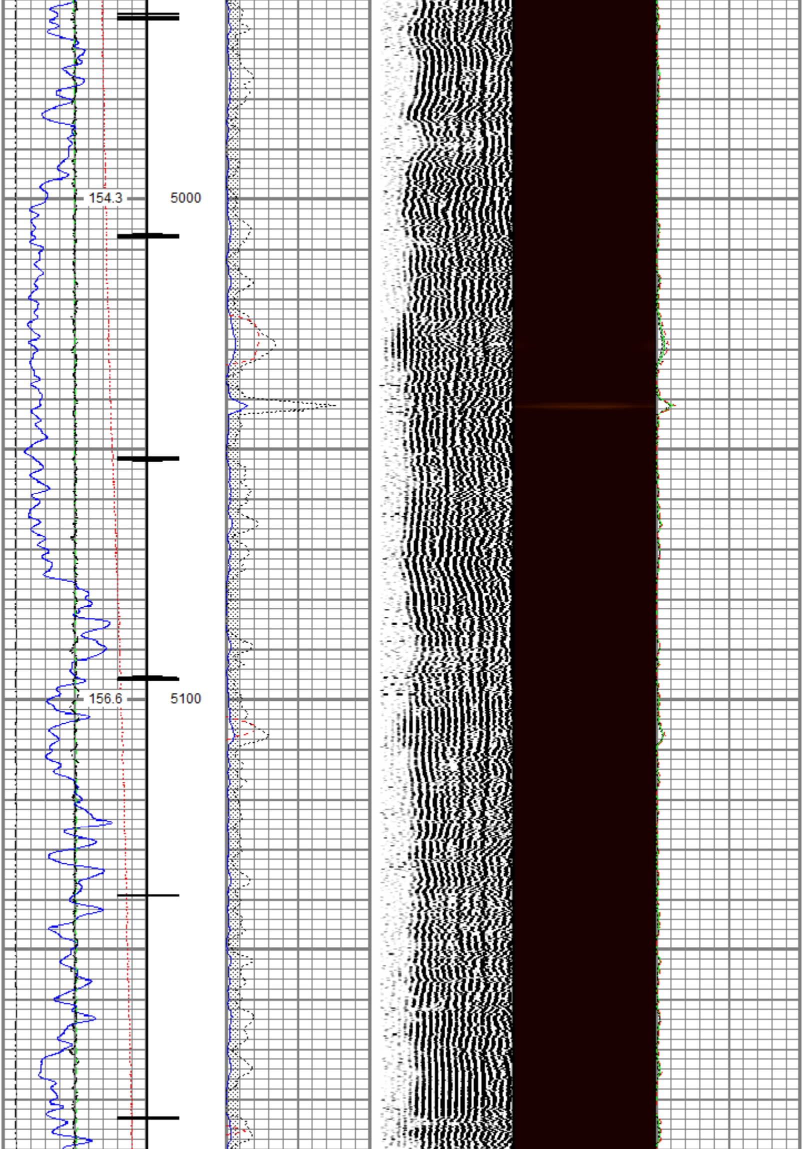
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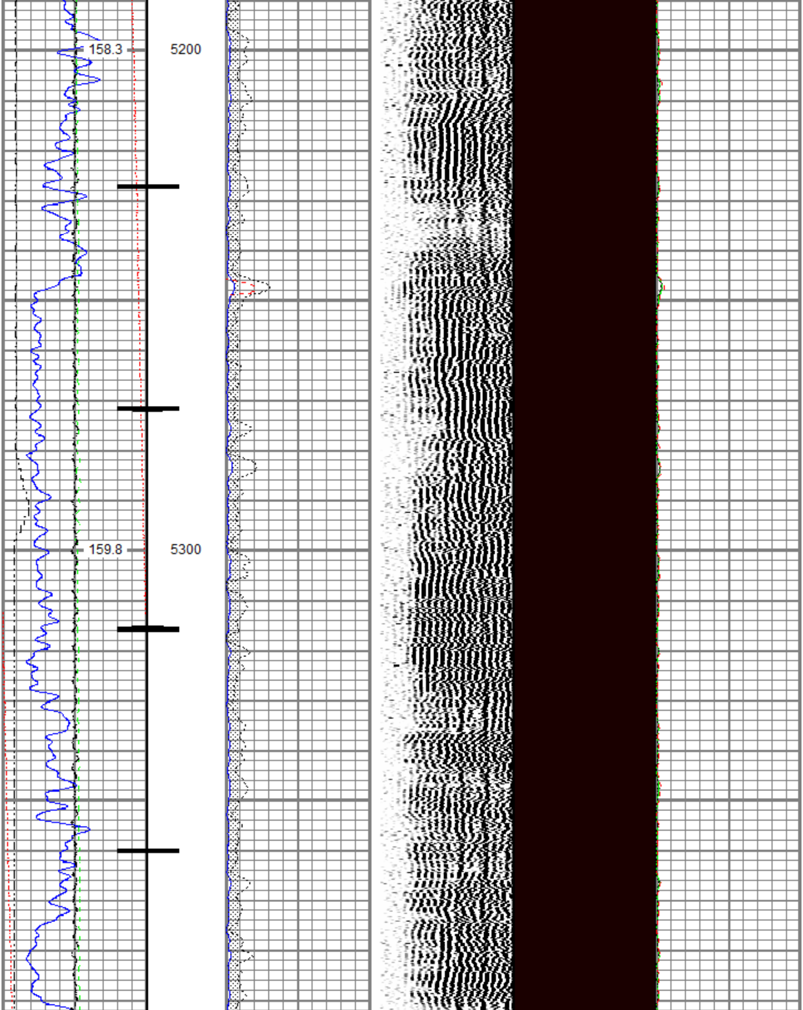
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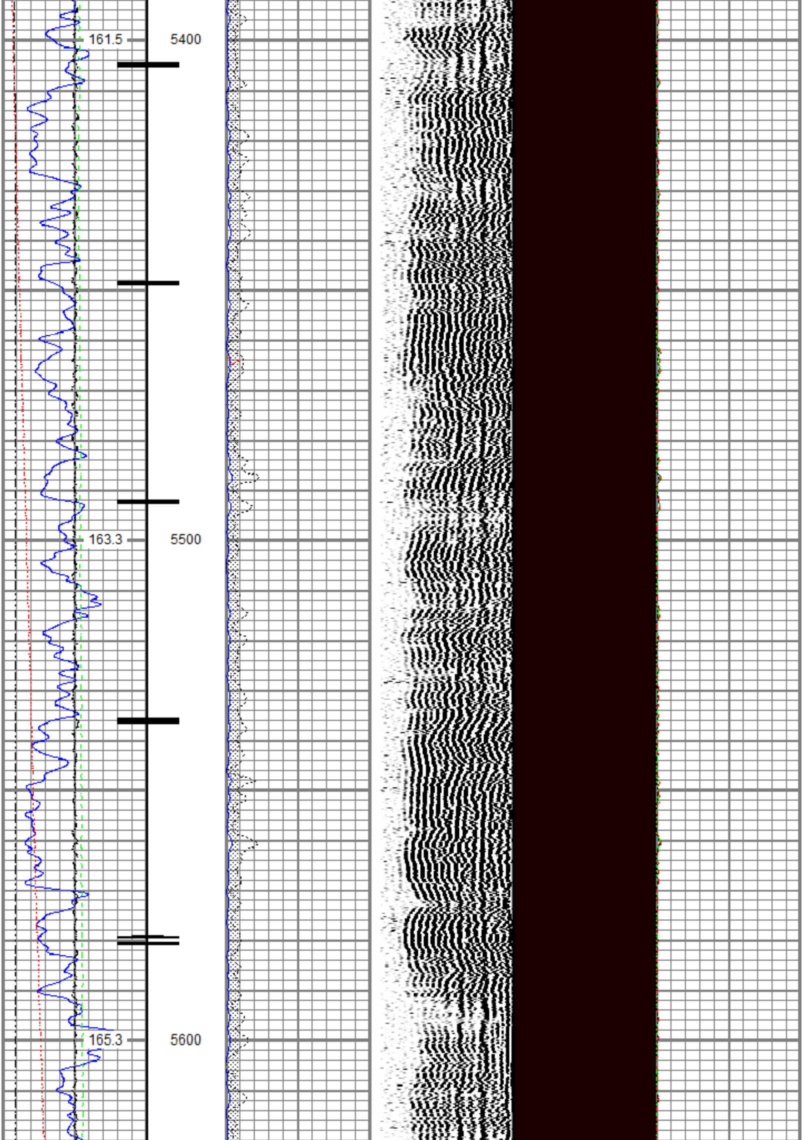
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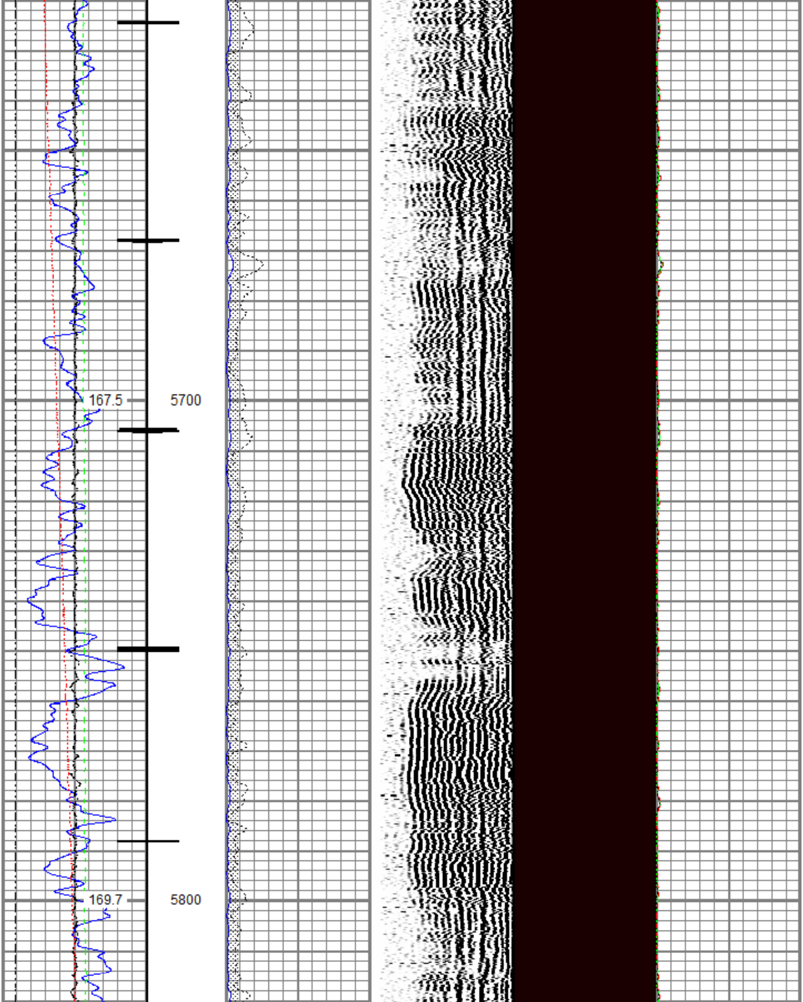
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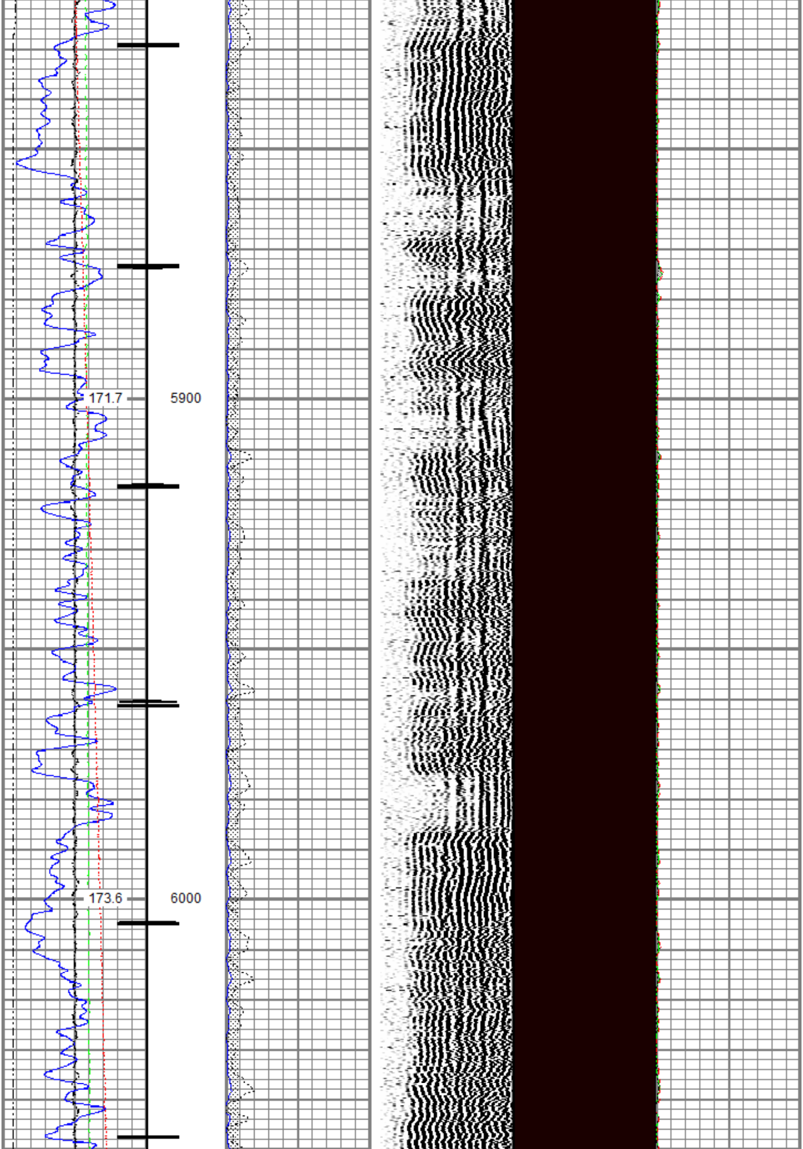
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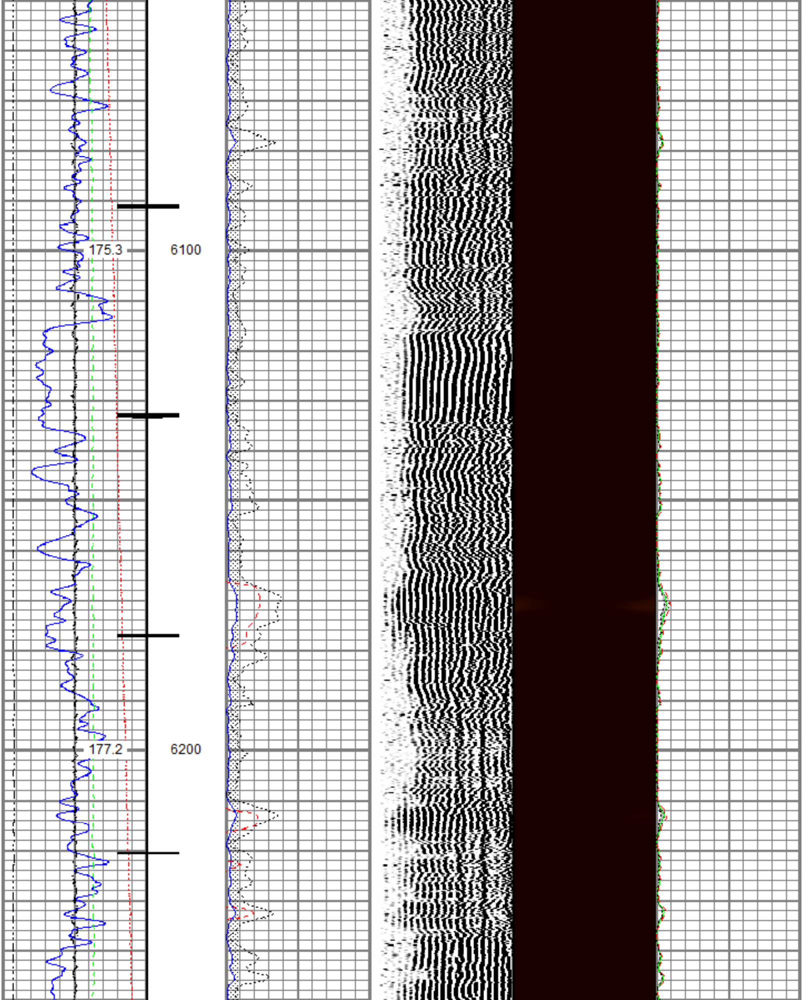
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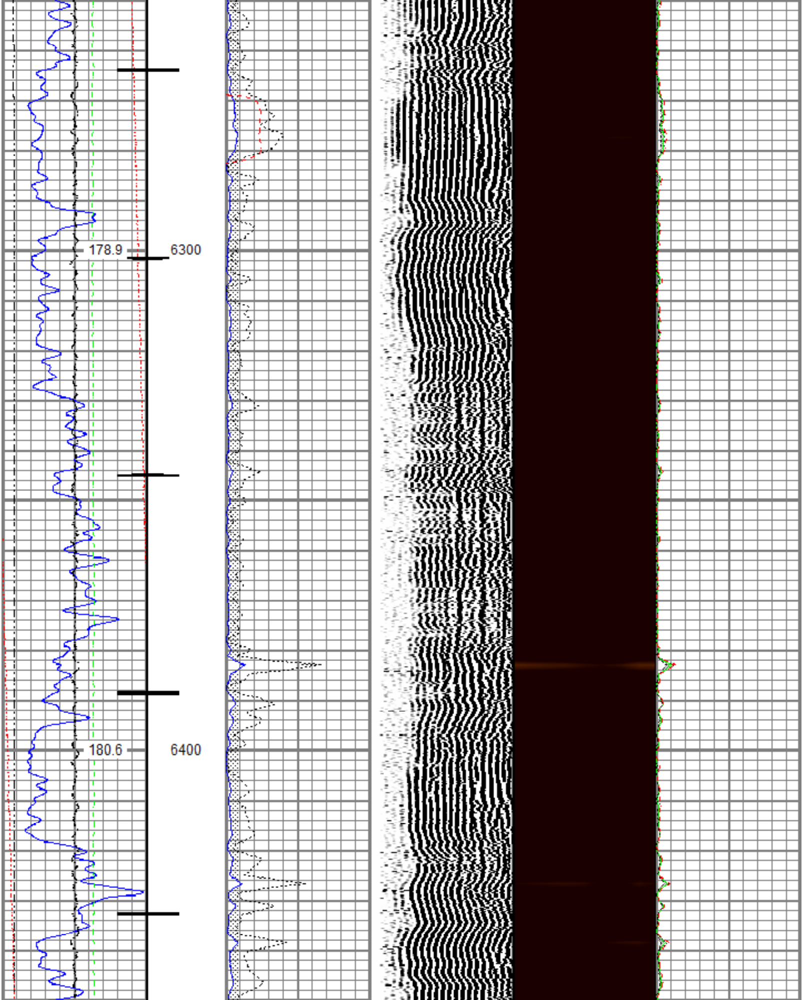
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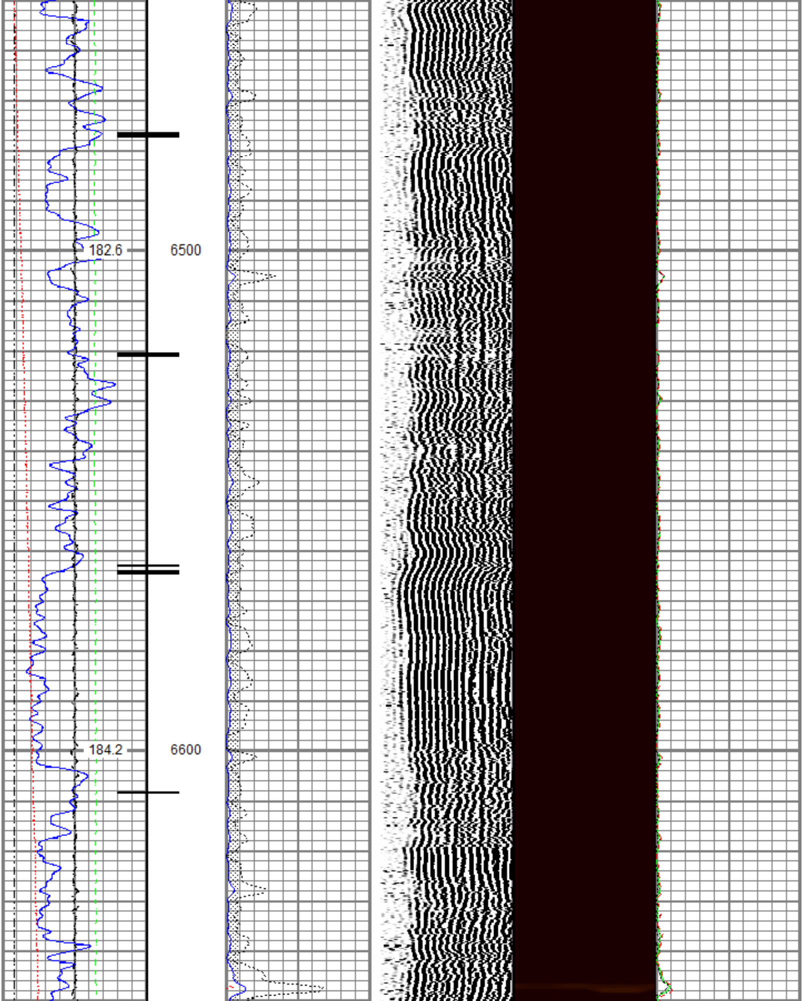
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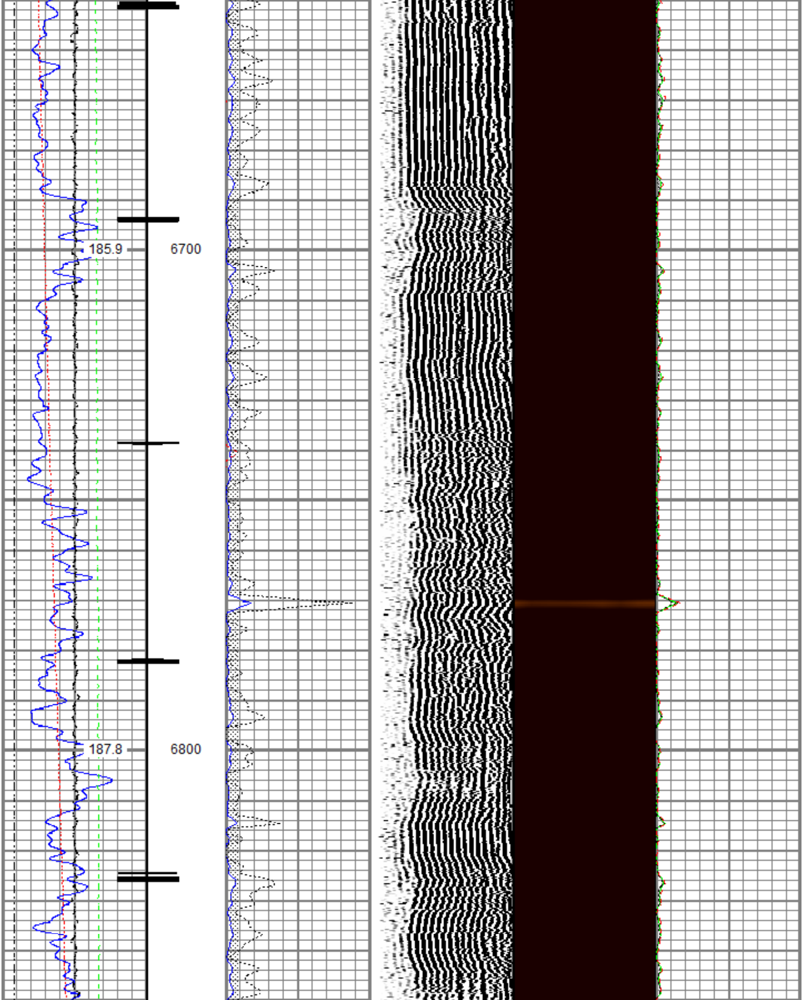
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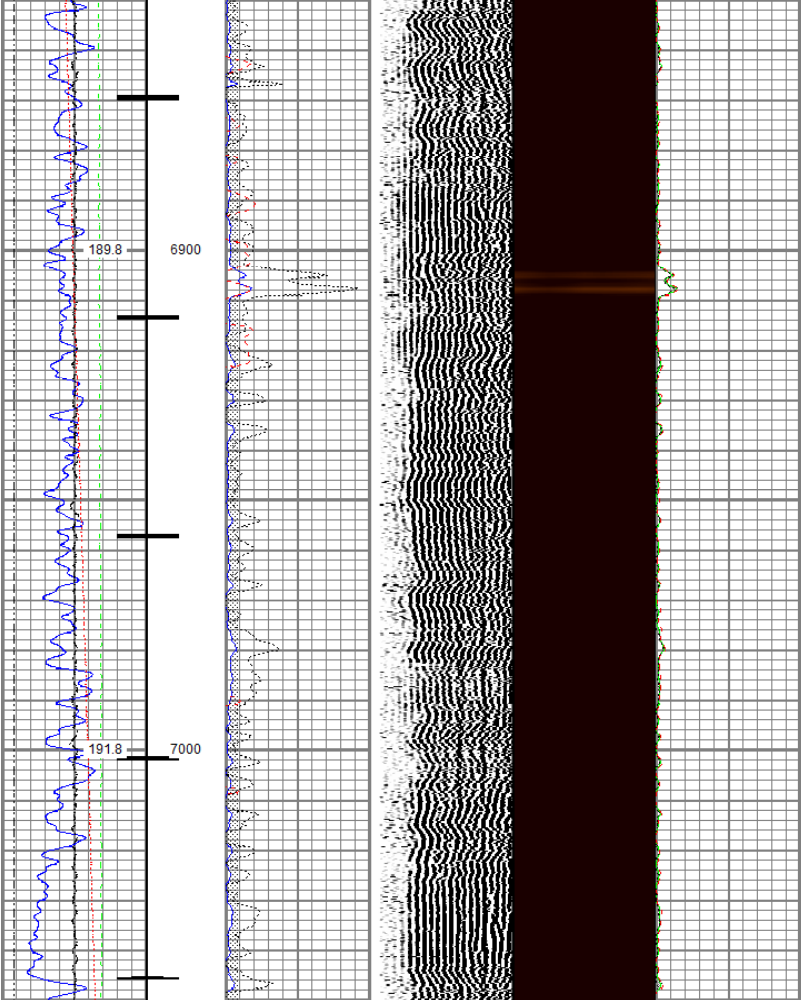
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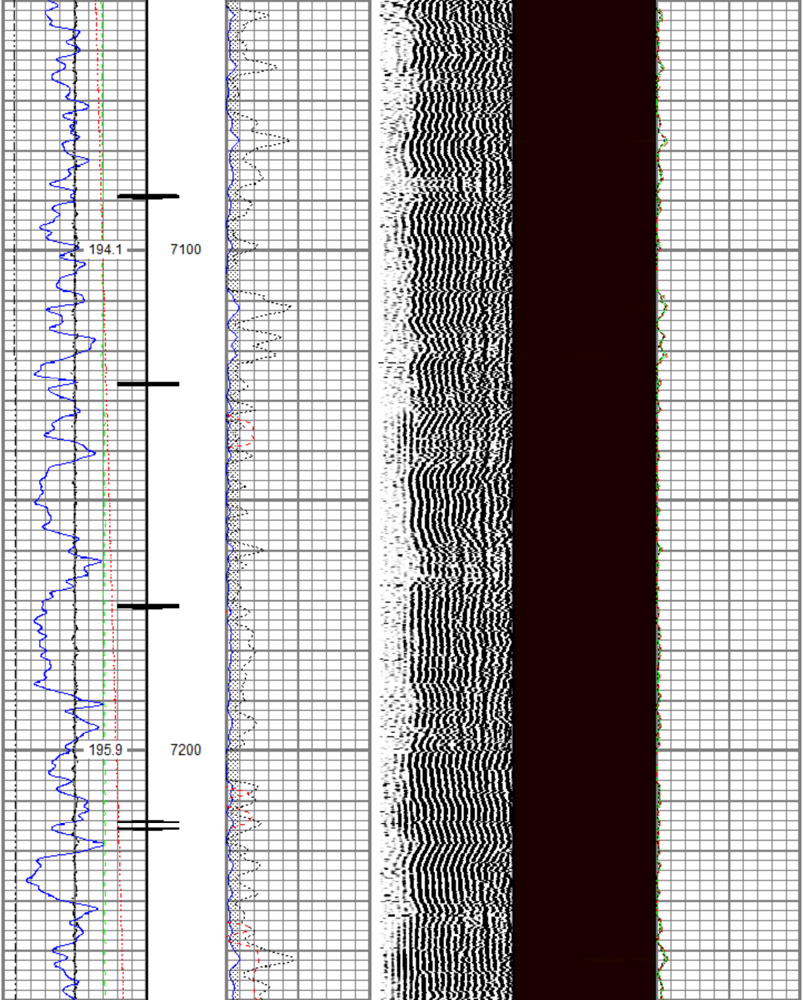
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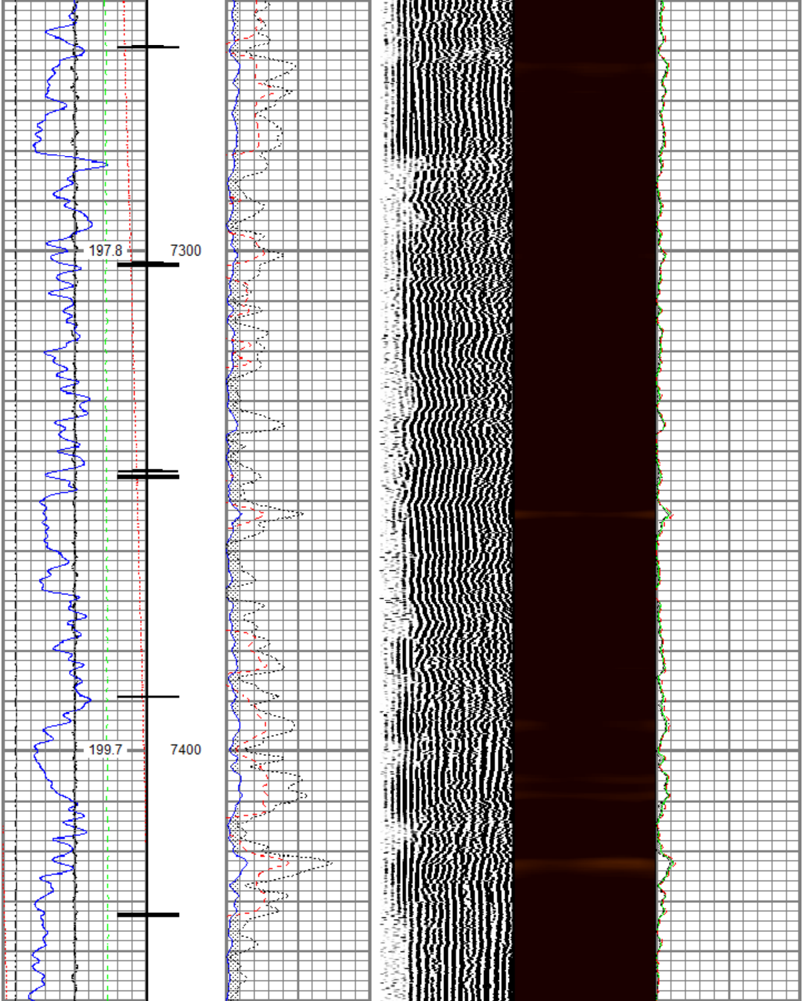
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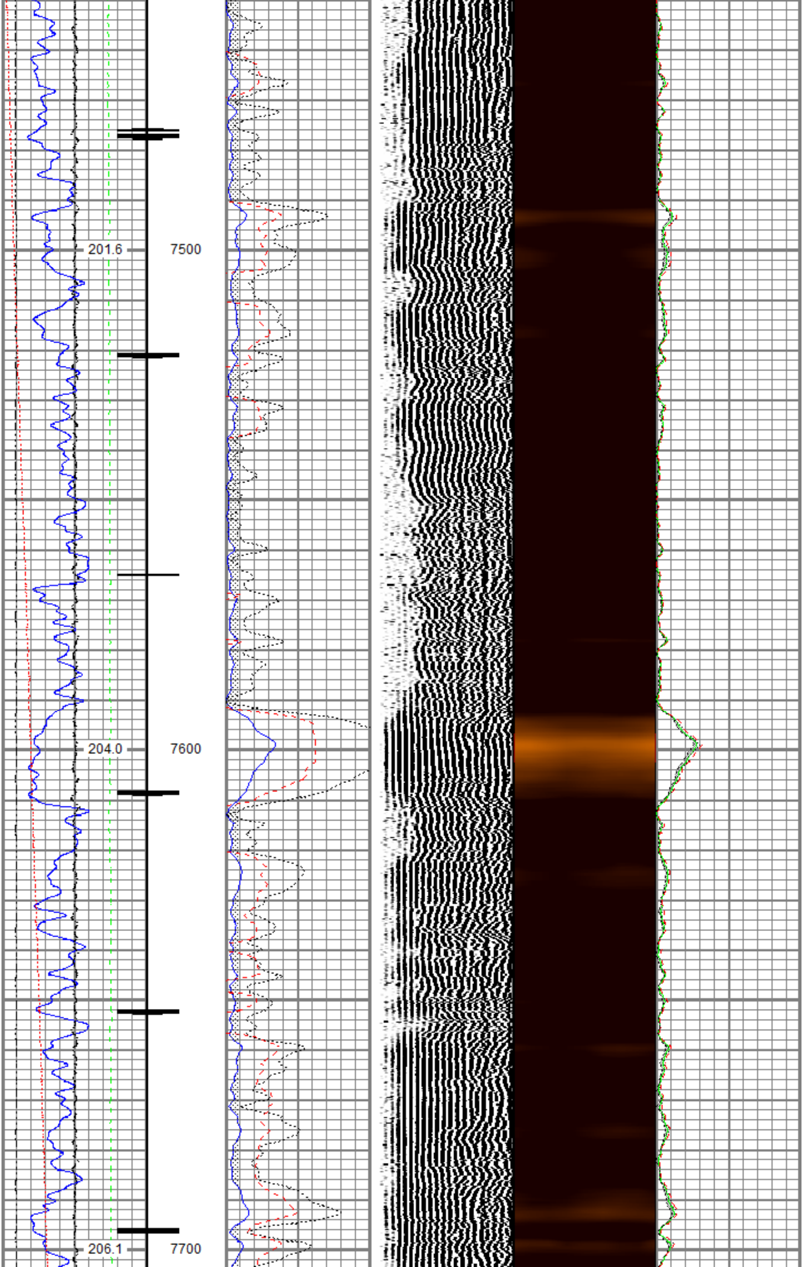
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7600
206.1
7700

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 (usec) 1200		0 150
Line Speed	3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 150
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	300 (usec) 200			0 150
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				
10 CCL 0				

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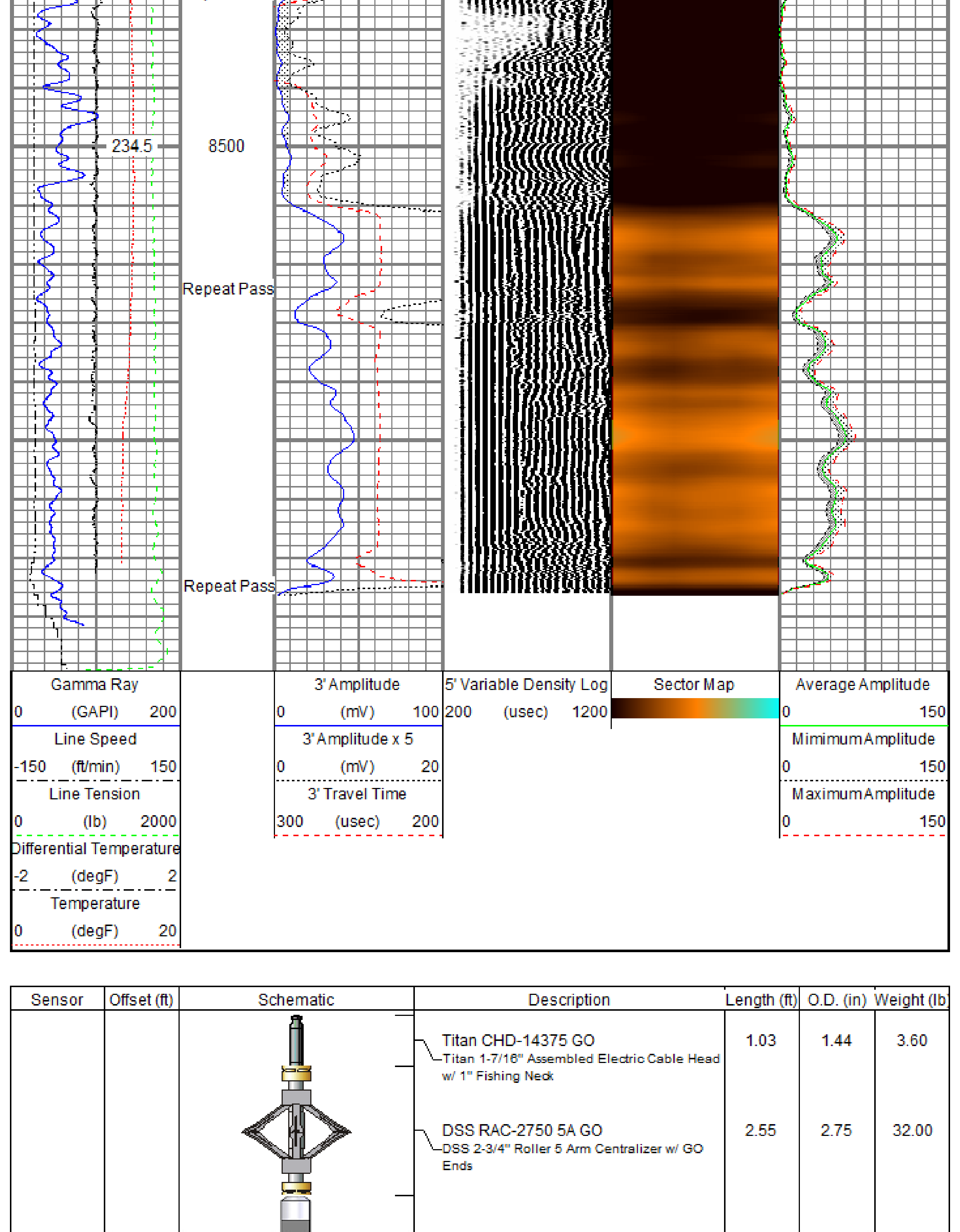
Repeat Pass

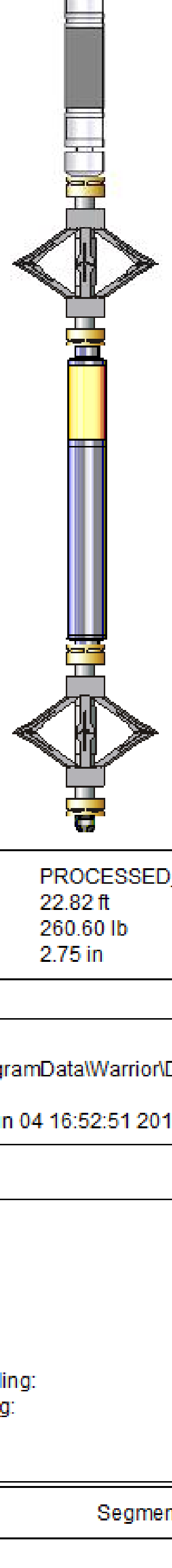
Recorded with 0 PSI Surface Induced Pressure

Database File	tep_federal pa 432-26_rbl_06-04-18\processed_tep_federal pa 432-26_rbl_06-04-18.db
Dataset Pathname	repeat1
Presentation Format	ros_rbt004_tep
Dataset Creation	Mon Jun 04 16:49:55 2018
Charted by	Depth in Feet scaled 1:240

Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 (usec) 1200		0 150
Line Speed	3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 150
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	300 (usec) 200			0 150
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				



Gamma Ray	3' Amplitude	5' Variable Density Log	Sector Map	Average Amplitude
0 (GAPI) 200	0 (mV) 100	200 (usec) 1200		0 150
Line Speed	3' Amplitude x 5			Mimimum Amplitude
-150 (ft/min) 150	0 (mV) 20			0 150
Line Tension	3' Travel Time			Maximum Amplitude
0 (lb) 2000	300 (usec) 200			0 150
Differential Temperature				
-2 (degF) 2				
Temperature				
0 (degF) 20				

Sensor	Offset (ft)	Schematic	Description	Length (ft)	O.D. (in)	Weight (lb
			Titan CHD-14375 GO Titan 1-7/16" Assembled Electric Cable Head w/ 1" Fishing Neck	1.03	1.44	3.60
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
TEMP WVFS8 WVFS7 WVFS6 WVFS5 WVFS4 WVFS3 WVFS2 WVFS1 WVFCAL WVF3FT WVF5FT HEADVOLT	16.33 14.10 14.10 14.10 14.10 14.10 14.10 14.10 14.10 14.10 14.10 13.10 9.85		Probe Radii-2750 RBT (FW1302-001) Probe 2-3/4" Radial Cement Bond Tool with Integral Temperature Sub	9.39	2.75	105.00
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
CCL$2 CCL$1 GR	6.42 6.42 5.18		Probe GR-CCL-2750 GOB (FW1307-038) Probe 2-3/4" rev.2 Digital Scintillation Gamma Ray/CCL Combined	4.51	2.75	55.00
			DSS RAC-2750 5A GO DSS 2-3/4" Roller 5 Arm Centralizer w/ GO Ends	2.55	2.75	32.00
			GO BN-14375 GO 1-7/16" Bull Nose with Go Box Top	0.25	1.44	1.00

Dataset: PROCESSED_TEP_Federal PA 432-26_RBL_06-04-18.db: field/well/run1/main
Total length: 22.82 ft
Total weight: 260.60 lb
O.D.: 2.75 in

Calibration Report

Database File	C:\ProgramData\Warrior\Data\TEP_Federal PA 432-26_RBL_06-04-18\PROCESSED_TEP_Federal PA 432-
Dataset Pathname	main
Dataset Creation	Mon Jun 04 16:52:51 2018

Gamma Ray Calibration Report

Serial Number:	FW1307-038	
Tool Model:	2750 GOB	
Performed:	Sun Nov 12 11:44:12 2017	
Calibrator Value:	637.0	GAPI
Background Reading:	113.2	cps
Calibrator Reading:	1022.4	cps
Sensitivity:	0.7007	GAPI/cps

Segmented Cement Bond Log Calibration Report

Serial Number:	FW1302-001	
Tool Model:	2750 RBT	
Calibration Casing Diameter:	4.500	in
Calibration Depth:	50.644	ft

Master Calibration, performed Mon Jun 04 15:22:19 2018:

	Raw (v)		Calibrated (mv)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
3'	-0.002	0.730	0.800	81.196	109.782	1.071
CAL	0.748	0.742				
5'	0.006	0.596	0.800	81.196	136.351	-0.019
SUM						
S1	-0.003	0.741	0.000	100.000	134.408	0.436
S2	-0.002	0.751	0.000	100.000	132.709	0.272
S3	-0.002	0.749	0.000	100.000	133.184	0.262
S4	-0.002	0.727	0.000	100.000	137.121	0.340
S5	-0.003	0.688	0.000	100.000	144.561	0.485
S6	-0.003	0.671	0.000	100.000	148.296	0.451
S7	-0.003	0.702	0.000	100.000	141.840	0.490
S8	-0.003	0.732	0.000	100.000	136.172	0.361

Internal Reference Calibration, performed (Not Performed):

	Raw (v)		Calibrated (v)		Results	
	Zero	Cal	Zero	Cal	Gain	Offset
CAL	0.000	0.000	0.748	0.742	1.000	0.000

Air Zero Calibration, performed Mon Jun 04 15:22:37 2018:

	Raw (v)	Calibrated (v)	Results
	Zero	Zero	Offset
3'	-0.003	0.000	0.001
5'	0.005	0.000	0.001
SUM			
S1	-0.003	0.000	-0.000
S2	-0.003	0.000	0.001
S3	-0.004	0.000	0.002
S4	-0.004	0.000	0.001
S5	-0.004	0.000	0.000
S6	-0.004	0.000	0.001
S7	-0.003	0.000	-0.000
S8	-0.003	0.000	0.001

Temperature Calibration Report

Serial Number:	FW1302-001	
Tool Model:	2750 RBT	
Performed:	Sun Nov 12 12:24:58 2017	
	Reference	Reading
Low Reference:	100.00 degF	107.47 degF
High Reference:	350.00 degF	404.08 degF
Gain:	0.84	
Offset:	9.42	
Delta Spacing:	1	

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County	Garfield
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